

ABSTRACT OF THE DISCLOSURE

A method for rounding the top corner of a trench. A masking layer is formed on a substrate, and the masking layer is then patterned to form at least one opening
5 therein to expose the substrate and form a recess region in the substrate. The recess region is oxidized to form a first oxide layer to round the top corner of the recess region. The first oxide layer and the substrate under the opening are successively etched to form a trench in the
10 substrate. A second oxide layer is conformably formed on the surface of the trench. A method for forming a shallow trench isolation structure is also disclosed.